

II. Remarks

Applicants have canceled claims 1, 5, 7, 17 and 18, and have amended claims 2-4, 6, 8, and 9. New claim 21 is presented for consideration. Claims 2-4, 6, 8-16, and 19-21 are pending. Amendments to the claims find support, for example, in originally filed claims 1-20, Figs. 3 and 5, and at page 14, lines 12-18, thus no new matter is introduced. Favorable reconsideration of this application is respectfully requested in light of the following detailed discussion.

Claim Rejections – 35 U.S.C. § 112

Claims 1-16 have been rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter of the present invention.

The Examiner asserts that the language "in an area predetermined by the configuration of the annular mold" renders claim 1 indefinite. Since applicants have canceled claim 1, 5, and 7 these rejections are moot. In place of independent claim 1, applicants have added independent claim 21, from which claims 2-4, 6, and 8-16 directly or indirectly depend.

The Examiner asserts that in claim 5 the "at least one groove" does not have proper antecedent basis. Since applicants have canceled claim 5, this rejection is moot.

The Examiner asserts that in claim 6 "the groove" does not have proper antecedent basis. Applicants have amended claim 6 to now claim the at least one peripheral annular groove, which applicants assert does have proper antecedent basis from new claim 21, from which claim 6 indirectly depends.

Thus, applicants respectfully submit that claims 2-4, 6, and 8-16 meet the requirements of 35 USC § 112, second paragraph. Accordingly, reconsideration of claims 2-4, 6, and 8-16 is requested.

Rejections - 35 USC § 102

The Examiner has rejected claims 1-15 under 35 USC §102(b) as being anticipated by U.S. Patent No. 5,139,552 to Yoshizawa et al. In a detailed analysis of the Yoshizawa reference, the Examiner sets forth his position that the present invention is, essentially, disclosed in Yoshizawa.

Since applicants have canceled claims 1, 5, and 7, the rejection of claims 1, 5, and 7 are moot.

With regard to dependent claims 2-4, 6, and 8-15, applicants assert that since these claims depend directly or indirectly from new independent claim 21, then these claims require at least the limitations of a full-face mold having a mold face, the mold face having at least one peripheral annular groove formed in the surface thereof, the at least one peripheral annular groove having a plurality of holes located therein, and an annular mold, wherein the at least one peripheral annular groove is formed in a peripheral area that corresponds to the molding contact area where a glass sheet is pressed between the full-face mold and the annular mold.

After studying the Yoshizawa patent, applicant can find nowhere in Yoshizawa where this reference teaches at least one peripheral annular groove formed in the surface of a full-face mold. Instead, applicants find Yoshizawa to teach, as shown at least in Yoshizawa's Fig. 2, that each of the convex and concave mold members 7, 8

has an integral contact surface 11 for contacting the glass sheet G, where each of the contact surfaces 11 has a plurality of "parallel grooves 12" defined therein (see, for example, column 3, lines 49-52). Applicants assert that the contact surfaces 11 of the mold members 7,8 extend over essentially the "entirety" of each of the mold members 7,8. Thus, Yoshizawa is contrary to the at least one peripheral annular groove of the claimed invention that is formed in the peripheral area of the full face mold that corresponds to the molding contact area where a glass sheet is pressed between the full-face mold and the annular mold (see, for example, Figs. 3-5 of the subject application).

In fact, applicants also assert that one skilled in the art of glass bending would recognize that since the invention of Yoshizawa is not only directed to bending a glass sheet but also to tempering a glass sheet, then Yoshizawa seeks to quickly and uniformly deprive the entirety of the glass sheet contact areas 11 of heat (see, for example, column 3, lines 42-48). By contrast, the claimed invention seeks to keep the middle area of the extensive full-face mold, and thus the glass sheet, free from holes so as not to adversely affect the optical quality in the viewing area of the glass sheet (see, for example, page 8, lines 6-10).

Specifically, new independent claim 21 requires at least one peripheral annular groove formed in a peripheral area that corresponds to the molding contact area where a glass sheet is pressed between the full-face mold and the annular mold. Applicants can find nowhere in Yoshizawa where this reference teaches these limitations. Instead, applicants find Yoshizawa to teach the concave and convex molds 209,210 coming together in molding contact with the glass sheet G therebetween to bend a "central

region" of the glass sheet G. Simultaneously, the ring mold members 208 (which are above and below the glass sheet G) come together in molding contact to bend the peripheral edge of the glass sheet G (see, for example, column 6, lines 31-55).

In other words, as claimed, the glass sheet is pressed between the full-face mold 6 and the annular mold 5, these two mold members coming into molding contact with one another. In contrast, in Yoshizawa, the two ring molds 208 are in molding contact with each other, while the convex and concave molds 209,210 are in molding contact with each other. Applicants can find nowhere in Yoshizawa where Yoshizawa teaches that the convex mold 209 is in molding contact with a ring mold 208, as the claimed invention requires.

Therefore, applicants respectfully submit that independent claim 21 and dependent claims 2-4, 6, and 8-15 that directly or indirectly depend from claim 21, are not anticipated by Yoshizawa, as the inventions defined thereby are not identically disclosed in Yoshizawa, as required by 35 U.S.C. § 102(b).

Consequently, claims 2-4, 6, and 8-15 should be allowed over Yoshizawa. Accordingly, withdrawal of the rejection of claims 2-4, 6, 8-15, favorable reconsideration of claims 2-4, 6, 8-15, and consideration of claim 21, are respectfully requested.

Rejections - 35 USC § 103

The Examiner has rejected claim 1 under 35 USC §103(a) as being unpatentable over U.S. Patent No. 5,139,552 to Yoshizawa et al., in view of either U.S. Patent No. 5,004,491 to McMaster or U.S. Patent No. 6,318,125 to Diederer.

In the Examiner's opinion, Yoshizawa discloses all of the elements of a "press bending station," but concedes that Yoshizawa does not set forth the relationship between the shape or configuration of the annular mold and the arrangement of either holes or grooves in the molding face of the full-face mold. In the Examiner's view, however, the McMaster reference describes a press bending station wherein a ring of vacuum ports are provided in the surface of a full-face mold such that the arrangement and location of such ports are "predetermined" by the ring mold.

Since claim 1 has been canceled, the rejection of claim 1 is moot.

With regard to new independent claim 21, after studying McMaster, applicants can find nowhere in McMaster where McMaster overcomes or suggests to overcome the shortcomings of Yoshizawa, which include at least one peripheral annular groove formed in the peripheral area of the full face mold that corresponds to the molding contact area where a glass sheet is pressed between the full-face mold and the annular mold. Instead, applicants find that McMaster teaches a male mold 48 with openings 96 formed "just inward from the ring mold 52" (see, for example, column 8, lines 8-10). Thus, McMaster does not overcome the shortcomings of Yoshizawa.

Similarly, in studying Diederens, applicants assert that Diederens' holes (air-inlet apertures 8) are, essentially, uniformly distributed in a linear manner over the face of the male mold surface (see, for example, Figs. 1 and 2). Applicants can find no disclosure or suggestion of such holes being located in at least one peripheral annular groove formed in the peripheral area of the full face mold that corresponds to the molding contact area where a glass sheet is pressed between the full-face mold and the annular mold.

In fact, the Diederer reference appears to be a mold of a type the present invention was designed to replace, where there are no grooves in the male mold 1 and where the air-inlet apertures 8 are not disposed as the claimed invention requires. For the reasons previously noted, the Yoshizawa reference does not teach the present invention, and the Yoshizawa and Diederer references together do not overcome the deficiencies of the Yoshizawa or Diederer references taken separately.

For all of these reasons, applicants respectfully submit that claim 21 is patentable over Yoshizawa in view of Diederer, as the inventions defined thereby are not suggested within either Yoshizawa or Diederer, nor is there any suggestion or motivation to modify or combine these references' teachings in order to teach or suggest the claimed limitations, as required by 35 U.S.C. § 103.

Accordingly, favorable consideration of claim 21 is respectfully requested.

The Examiner has rejected claim 16 under 35 USC §103(a) as being unpatentable over Yoshizawa in view of U.S. Patent No. 5,672,189 to Funk.

As previously discussed herein, the Examiner is of the opinion that the Yoshizawa reference teaches all of the essential elements of a press bending station, but concedes that Yoshizawa does not explicitly disclose that the mold can be heated, as claim 16 requires. The Examiner asserts that Funk discloses various ways to heat a mold by passing heated fluids through passages in the mold body.

Applicants assert that since independent claim 21 is patentable over Yoshizawa, then at least on this basis, claim 16, which indirectly depends from claim 21, is patentable over Yoshizawa in view of Funk.

Further, applicants submit that one skilled in the art would not be motivated to look to Funk or any other source to heat the mold of the Yoshizawa reference, as the mold of Yoshizawa is intended to act as a means to quickly deprive a glass sheet of heat (see, for example, column 3, lines 42-48), both by blowing air from the holes in the mold onto the glass, and by using the metal of the mold as a heat sink to further cool the glass for tempering purposes.

For all of these reasons, applicants respectfully submit that claim 16 is patentable over Yoshizawa in view of Funk, as the inventions defined thereby are not suggested within either Yoshizawa or Funk, nor is there any suggestion or motivation to modify or combine these references' teachings in order to teach or suggest the claimed limitations, as required by 35 U.S.C. § 103.

Accordingly, withdrawal of the rejection of claim 16 and favorable reconsideration of claim 16 is respectfully requested. Consequently, applicants respectfully submit that claim 16 of the present application is allowable over Yoshizawa in view of Funk.

The Examiner has rejected claims 17-20 under 35 USC §103(a) as being unpatentable over Yoshizawa in view of U.S. Patent No. 5,376,158 to Shetterly et al.

The Examiner takes the position that Yoshizawa, while describing many elements of the mold of the present invention, the Examiner concedes that Yoshizawa does not disclose the use of negative pressure as a means for securing material to the mold surface, or positive pressure as a means for releasing material from the mold surface. In the Examiner's opinion the Shetterly reference discloses this missing element.

Since claims 17 and 18 have been canceled, the rejections of claims 17 and 18 are moot.

Applicants traverse the rejections of independent claim 19 and its dependent claim 20 by asserting that amended independent claim 19 and its dependent claim 20 require at least the limitations of the first mold having a major surface with at least one peripheral annular groove thereon, at least one hole defined therein, the hole being disposed in fluid communication with the at least one peripheral annular groove and selectively connected to a negative pressure source for holding material to the surface, thus allowing the material to be shaped into a part when the molds are urged together. Applicants agree with the Examiner's concession that Yoshizawa does not teach the use of negative pressure (claim 19) as a means for selectively securing (holding) material to the mold surface, or positive pressure (claim 20) as a means for selectively releasing material from the mold surface, as required by these claims.

Also, for the above-stated applicants' arguments in regard to the Examiner's 35 USC 102 rejections, applicants assert that Yoshizawa does not at least teach at least one peripheral annular groove thereon. Therefore, applicants assert that the apparatus of the Yoshizawa reference does not, and is not intended to, operate in the same way as the apparatus of the present invention.

In addition, after studying the Shetterly reference, applicants assert that Shetterly (like McMaster discussed above) does not teach or suggest disposing holes in at least one peripheral annular groove, with the advantages attendant to such an arrangement, as discussed in the present application. For all of these reasons, applicants respectfully submit that independent claim 19 and its dependent claim 20 are patentable over

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Yoshizawa in view of Shetterly, as the inventions defined thereby are not suggested within either Yoshizawa or Shetterly, nor is there any suggestion or motivation to modify or combine these references' teachings in order to teach or suggest the claimed limitations, as required by 35 U.S.C. § 103.

Accordingly, withdrawal of the rejection of claims 19-20 and favorable reconsideration of claims 19-20 are respectfully requested. Consequently, applicants respectfully submit that claims 19-20 of the present application is allowable over Yoshizawa in view of Shetterly.

If the Examiner has any remaining questions or concerns, or would prefer claim language different from that included herein, the favor of a telephone call to applicants' attorneys is requested.

Respectfully submitted,



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